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Combat Crew

strategic air command

★★★★ OCTOBER 1975

HIGH NOON

UNIV. OF FLORIDA LIBS.
DOCUMENTS
DEPARTMENT
U.S. DEPOSITORY

Results on page 28

Combat Crew

strategic air command

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ON OUR COVER

Rapid response was required in the days of the Old West and also in the planning and execution of Operation High Noon. See page 28 for wrap-up story.

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"IMPACT OF SAFETY ON READINESS"

CLYDE R. DENNISTON, JR.
Brigadier General, USAF
Inspector General

The SAC Inspector General is responsible for maintaining a continuing surveillance over the status of readiness within the command. Since readiness is directly related to the preservation of resources, both personnel and equipment, we each have an individual responsibility to ensure that our combat capability is preserved by guarding against accidental loss. Accidents, on or off duty, decrease the overall capability of a unit.

In 1974, there were 97 fatalities within the command: 15 in aircraft accidents and 82 in ground accidents. Seven aircraft were destroyed in flight accidents, and 37 were damaged in ground accidents. Additionally, we lost 16,854 man days of productivity due to military on and off-duty ground accidents. Dollar losses for ground accidents exceeded $7,000,000.

What can be done to stop this senseless loss of valuable resources? First, we must accept a basic premise that is the cornerstone of the Air Force Accident Prevention Program: accidents do not just happen, they are caused. More importantly, they can be prevented. Safety, as related to job performance, is nothing more than doing the job the right way. It can be as simple as following technical data to the letter, and insisting that others do the same. Technical data shortcuts have resulted not only in the termination of many careers, but also the loss of many lives and resources as well.

Preservation of resources requires the involvement of all—commanders, supervisors, and each individual. The commander is singularly responsible for maintaining a viable accident prevention program. Safety program achievements are directly related to the degree or level of the commander's interest. If his interest and safety awareness does not permeate the entire organization, the written safety plan means nothing. In these times of austere funding and manning, it is not a coincidence that each commander has had a renewed interest in the protection of his limited resources.

Developing a positive attitude toward safety is the responsibility of supervisors to ensure the effectiveness of the commander's safety program. It is not an easy task, but a challenge that must be undertaken if we are to continue our outstanding mission effectiveness. Because such an attitude is not inherent in all of our people, it must be nurtured by the supervisor. He must instruct personnel in common safe practices, especially those related to their job, and then enforce those standards to the utmost of his ability.

Any systematic review shows that personnel error causes the majority of incidents and accidents. Further, most accidents reflect the same recurring mistakes and failures. This indicates a lack of self-discipline; a failure to follow directions.

A good safety record means only one thing: people are doing the job right—the way they should. When personnel errors start to occur, they indicate a prelude to accidents. They also warn that discipline is lax, that the people are not doing their job in the prescribed manner and that supervisors are not meeting their responsibilities.

SAC's safety record is outstanding. It got that way by attention to detail, by the fact that the SAC professionals were well-trained, imbued with safety, and disciplined to do the job right. But even this record can be improved—and it must be. By all working together as a team towards a common objective, we can approach "zero" accidents. We cannot do this when safety and professionalism relax. We must depend upon compliance "to the letter" to further our improvement is this costly area.

One additional way that each person can contribute is through the identification of potential accident causing deficiencies. The USAF Hazard Reporting System provides the means for all personnel to alert supervisors of conditions requiring prompt corrective action. This vehicle has proven effective in the prevention of serious health hazards, accidental injury or death of personnel, and damage or destruction of equipment. Each person has the responsibility to submit a hazard report (AF Form 457) when he detects an unsafe condition. Proper corrective action for identified deficiencies will eliminate or reduce the risk and prevent an accident.

In summary, the Strategic Air Command is a force of dedicated professionals. We must not lose sight of our primary mission. We must also be keenly aware of our obligation to protect all Air Force resources from preventable accidents. Safety is the product of all our people, and when evaluating a unit, the safety record is a direct measure of how well each person performs on a daily basis. ★

FOR THE...

MAJOR RICHARD W. BLATTER
Editor

Several years ago, while flying a low level training mission in the southeast, my aircraft sustained a bird strike that caused extensive damage to the outboard section of the right wing, and created the potential for the loss of the aircraft and possibly my crew!

We were operating at 500 feet and 250 knots and had completed almost one-half of our low level route. As we rapidly approached a small flock of large black birds, I initiated an evasive climb thinking I could avoid the formation. Shortly thereafter, the copilot reported that we had just missed one and seconds later we heard and felt a mild shock.

Looking at the right wing, the copilot informed us that we had hit one of the birds and it had penetrated the leading edge several feet inboard from the wing tip. We didn't know it at the time, but the impact had created a hole seven inches in diameter and the bird had penetrated the outer skin, the leading edge heater duct and had entered the outboard fuel tank. Fortunately, the air pressure on the leading edge caused the fuel to remain in the outboard tank—but only while we were airborne.

We knew we had taken a good hit, but from the cockpit the impact damage did not appear to be as extensive as it was. We made a successful controllability check, declared an emergency and reviewed our emergency egress procedures. The approach and touchdown were normal; but as the aircraft decelerated on the runway, the fuel in the outboard tank moved forward causing a huge stream of JP-4 to be forced out the hole in the leading edge. After stopping the airplane, we shut down and evacuated on the runway. The fire fighters were in position immediately but luckily no fire occurred.

In another incident, a B-52 crew was two minutes past the IP on a low level bomb run when a bird struck the center window frame between windows one and seven. The majority of the disintegrated bird entered the cockpit through the upper left corner of window number one which was still intact but pushed into the cockpit. Pressurization and all oil pressure indications

MIGRATORY

were lost. No other systems malfunctions were noted. The pilot slowed the aircraft and returned to his home station where an uneventful landing was accomplished. In addition to the window and frame damage, postflight inspection indicated damage to the leading edge of the right wing.

In a third case, the pilot of a KC-135, on takeoff roll and after rotation, observed numerous birds on the departure end and overrun. He warned the crew on interphone and attempted to clear the birds by increasing the climb angle. At 50′ a hawk collided with the number three engine. Fire and low oil lights illuminated, the engine was shut down after safe altitude and airspeed were attained. The aircraft accomplished an uneventful three engine landing.

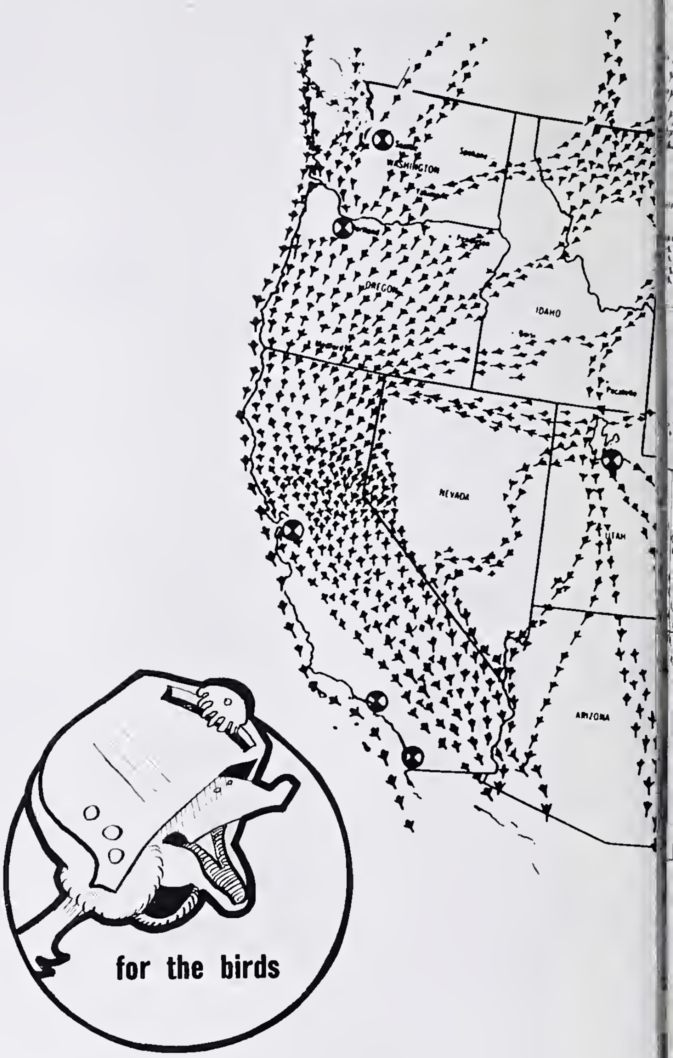
These three incidents are only a few of hundreds that military aircraft experience each year and the cost and the amount of damage is almost unbelievable. In 1973, the total cost for all USAF bird strikes was in excess of $24,500,000. Each year Air Force aircraft sustain well over 300 damaging bird strikes. Almost all major aircraft structural components are vulnerable to the bird strike hazard. In past years the components that have led in strike frequency have been engines, wings (including leading edge flaps and slats), nose/radome and windscreens/canopies in that order.

Engine damage is consistently the front runner in bird strike frequency and cost. Every year approximately 100 cases of damaging bird ingestion are reported which require major maintenance or engine replacement. Most cases of damaging bird ingestion result in inflight engine shutdowns and aborted missions which add additional costs in lost aircrew training. Ever present, however, is the greatest potential hazard of crew member or aircraft loss due to bird ingestion.

Radomes and wing leading edges have sustained damage ranging from small dents to major structural damage. Wing flaps and slats have taken their hits too. However, in recent years no serious controllability problems have been reported as a result of flap or control surface impacts.

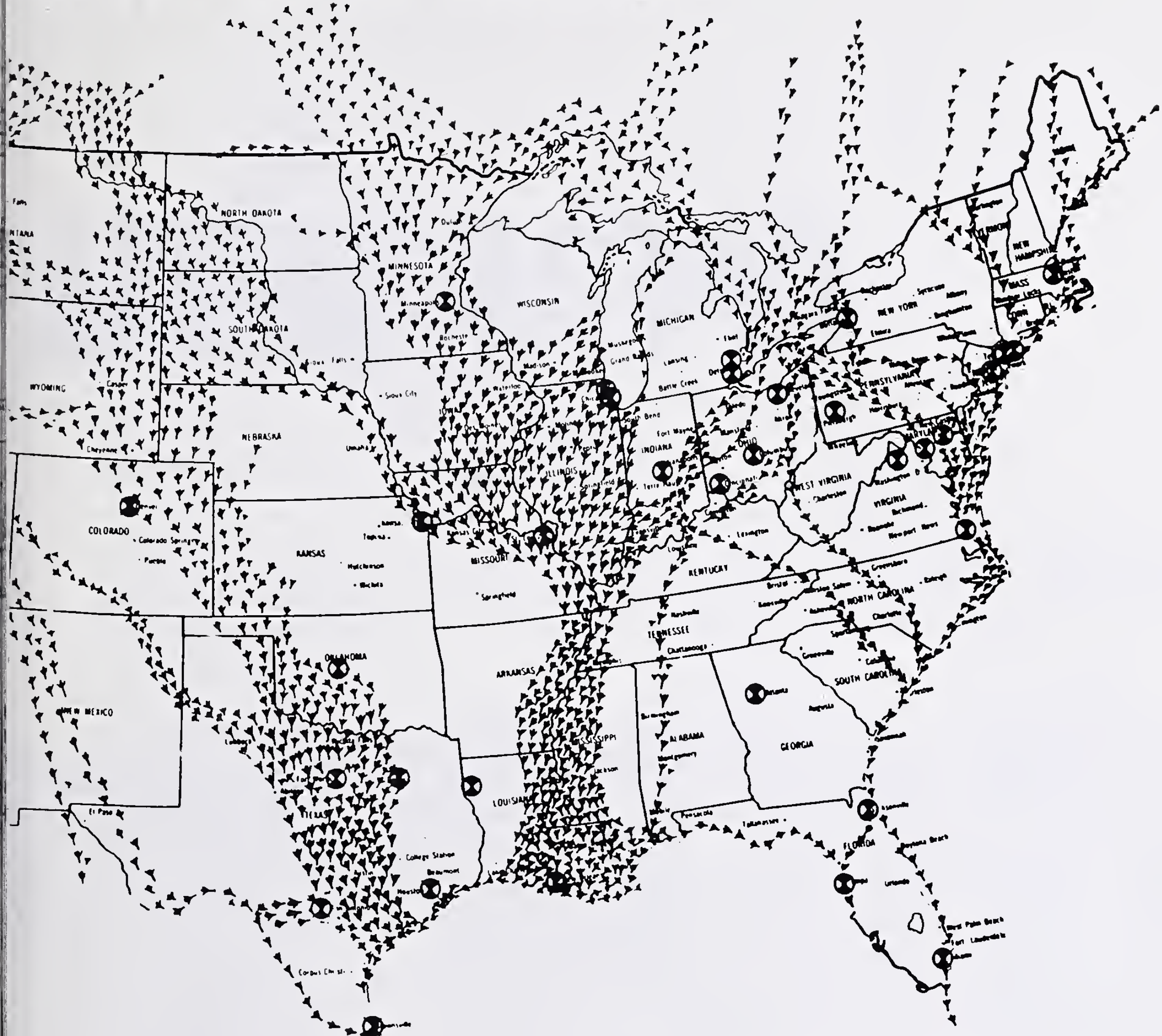
Windscreen and canopy penetrations are the greatest immediate hazard to aircrews. The cost factor takes on even more meaning when we experience a fatality or injury to an aircrew member. We've lost several crew members from this type of bird/aircraft collision. In the latest incident, an instructor pilot did not survive after a bird penetrated the windscreen of his aircraft.

Increased windscreen/canopy impact resistance is a major consideration in new aircraft development and in existing aircraft improvement programs. For example, the Air Force Systems Command Flight Dynamics Laboratory at Wright-Patterson AFB is currently conducting studies which can be used to increase the windscreen impact resistance of all -111 series aircraft. Continued research of this nature is essential in order to reduce the potential for loss of life and damage to our weapon systems.



October marks the start of the autumn bird migratory season. During the October-November time period, and again in March and April, peak numbers of migratory birds make their annual trip to new nesting areas. Fortunately for daytime flying operations, the bulk of the migration is at night, however, some daytime movement occurs as birds move from nesting to feeding areas. The hazard caused by birds in migration has been with us since we first started flying airplanes and it is still with us each time we fly: day, night, winter, summer, IFR,VFR, low level, high altitude, takeoff and landing. But the hazard is significantly increased during the spring and fall migratory

BIRDS FLIGHT PATTERNS



seasons.

Birds considered to have the greatest potential hazard to aircraft because of their large size, abundance, or habit of flying in dense flocks are whistling swans (male mean weight over 16 pounds), Canadian geese, blue geese, white-fronted geese, mallards, pintails gulls, vultures, starlings, and black birds. Birds of these species are considered particularly hazardous during spring and fall migrations and when they are concentrated in their wintering areas.

The Air Force and the FAA have expended considerable time and effort to reduce the impact hazard but the main problem is the inability to control the birds. The SOF may be able to chase a few birds off the runway prior to a launch or recovery; the airfield manager can insure that the tall grass on the airfield is kept cut down; and the aircrew can accurately report bird strikes and other bird activity. These actions certainly help in reducing the hazard but the birds that are affected account for only a small percentage of all feathered activity.

Faced with only minimal control of bird locations and movement, a general understanding of bird habits and migratory patterns can contribute to the reduction of the bird strike hazard. Long range migration studies have revealed basic and almost unchanging migration patterns. In the continental United States, four major flyway routes have been identified: Atlantic, Mississippi, Central, and Pacific. These flyways contain the heaviest concentration of migratory activity during spring and fall relocations. Information from quantitative migratory surveys indicate that more than 25,000,000 waterfowl and other bird species move through these flyways each migratory season.

At many airports, birds concentrate in large numbers and have been observed flying in large flocks throughout the runway complex creating

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OPERATIONAL TEST

Photo by 1Lt Bob Richardson

LAUNCH

1/LT MICHAEL F. KAISER
351 Strategic Missile Wing, Whiteman AFB

To establish reliability and accuracy of Minuteman and Titan weapons systems, an operational missile is selected at random from a launch facility by SAC Headquarters. The missile is then removed and transported to Vandenberg AFB and placed in a specially adapted, refurbishable launch facility. When the sortie has completed all functional tests, it is then fired down the Western Test Range.

As a student missile combat crew member, I was awed by the first missile launch that I saw. The tremendous roar and telltale rattling of windows marked the first stage ignition of the Minuteman. While in class, I often found myself jockeying for a position from which I could see the missile launch with its characteristic smoke ring. Probably few of us gave serious thought to the purpose or process that had brought the selected sortie and supporting task force to Vandenberg. I know that I never really thought that I would get back to Vandenberg to actually launch a missile. However, a year after my initial assignment to the 351 Strategic Missile Wing, Whiteman AFB, I found myself in a Vandenberg launch control center (LCC) monitoring a Minuteman missile for its upcoming test launch.

The opportunity of actually turning keys and "punching one out" is quite a reward in itself. The process of generating the sortie to a launchable configuration and maintaining it, offers the crew member an opportunity that is not possible at the operational support base. All areas of maintenance activity, safety, and associated scheduling are present from the initial start-up of the LCC and launch facility to the dissipation of codes and shutdown following the launch. A crew member spends his alert hours working closely with maintenance teams until titles like "missile maintenance team" and "electro-mechanical team" take on meanings that are associated with vital and distinctive tasks, equipment, and skills.

The hours of work and of status monitoring come to a close on the long-awaited day. The secondary crew assigned to the launch arrives early with the coded launch control equipment panels and joins the on-duty primary crew to complete the emergency combat capable launch configuration. This configuration enables the launch of the missile through the use of only one missile LCC instead of the five which is the normal configuration at the operational base. A few hours prior to the opening of the launch window, the Western Test Range communications network is tested and the range countdown checklist initiated. Actions progress slowly. The pace quickens as launch time approaches and the time constraints tighten. The final few minutes are fast-paced but deliberate as messages are copied and checked, keys inserted and turned, the Missile Away is reported, and the crews rush out to stare upward.

The test shot for which the hours of preparation and anticipation were so long is over quickly. The impact of what you have just accomplished begins to settle gradually as you journey home and describe the events to your fellow crew members. But the full force, perhaps, is not realized until you are back on alert. In the early hours of the morning, behind an actual blast door with the accustomed hum of equipment surrounding you, you realize that the system which you have spent so long mastering and which "they" always told you would work—**really works!**

EYES OF AN EAGLE

DR. JAMES D. EDWARDS
Major, USAF

How many pilots take pride in having the eyes of an eagle? Optometrists hear that claim most often just after telling a patient that he needs glasses for distance vision. But for the normal two-eyed humans, sight without glasses may not be as eagle-like as they might think. In fact, man's eyes fall far short of an eagle's in many ways.

The eagle, like other birds of prey, can see objects fifteen times smaller than a man can. In other words, he can spot a bogey four times as far away. The unglamorous vulture can differentiate between live and dead game from an altitude of over 13,000 feet, yet a man on the ground would be unable to see the vulture with its ten-foot wingspan at that height.

When light levels are low, man also fares relatively poorly. Cats can see their best under the light of a full moon and owls can see well enough by starlight to catch mice. But seeing things as clearly as the eagle does or in as little light as the owl can, will not solve most of man's visual problems, especially men who fly.

Man's eyes are designed to perceive the things he sees on earth, while he's traveling on foot. And like the carnivorous animals, man has eyes in the front of his head to better see where he's going (but less able to see where he's been or who is behind him). When man mounts a supersonic bird and discovers the dynamics of flight, he is suddenly the victim of his own earthbound visual limitations.

Empty Space Myopia

Sounding more like budget problems at NASA, empty space myopia is actually a tendeny for the eye, when presented with an empty field of view, to undergo *reflex accommodation.* With nothing to focus upon, the focusing muscle is rendered myopic (near-sighted) and your 20/20 vision can decrease to 20/200. A seven-foot-wide fuselage, visible at over four miles with 20/20 vision must come to within three miles with 20/30 vision and less than a mile to be visible with 20/200 vision. Given a set of dust spots and bugs on the canopy, most pilots' eyes will focus on them and not see another airplane until it's very, very close.

A related illusion is the *rising moon phenomenon.* When the moon first comes over the mountain it seems enormous compared to its size when high in the sky. With horizon detail to relate to, man subjectively feels that the moon is bigger and sees it that way. Man can encounter all sorts of problems in depth perception and spatial disorientation when deprived of his everyday clues to measurement, due to the fixed geometry of his visual system.

Night Myopia

As illumination decreases, the human eye suffers from night myopia, a condition of nearsightedness similar to space myopia in that it can be caused by reflex accommodation. It can also occur because the predominantly short blue wavelengths, to which the eye is more sensitive at night, focus in front of the retina making the eye slightly myopic. But the most likely cause of night myopia is the fact that the little crystalline lens (about the size of an aspirin tablet) behind the pupil of the eye is not an optically perfect device. When the pupil is small during bright daytime illumination, only the fairly uniform, spherical center of the lens passes light. But at night, the pupil opens up and passes light through the more convex edges of the lens, making the eye myopic. Fortunately, night myopia is not a widespread condition.

Glare

Since man's visual system is designed for overhead lighting—the sun shining down on him—his brow provides some shade and helps prevent sunburned eyeballs. With a blanket of highly reflective (90 percent) snow below, snow blindness is a common (though not fatal) malady. The same problem exists for a pilot when flying above the clouds which reflect about 80 percent of the light. Proper eye protection—sunglasses, goggles or visor—will help prevent this kind of glare from creating a problem.

Light intensity increases with altitude (15 percent brighter at 50,000 feet). It's always a good idea to use some form of protection when you're up high because the intense ultraviolet light at high altitudes can cause the eye's lens to fluoresce—absorb the ultraviolet and give off visible light which scatters inside the eye. This kind of glare is both distracting and uncomfortable.

The higher one flies, the more brilliant the light and the deeper the shadows. With less atmosphere to scatter the light, the contrast between the sunbathed half of an instrument panel and the shadowed half may be more than the eye can promptly compensate for. Even though the eye's adaption ratio is 1,000,000 to one, some time is required for full compensation.

The glare problem has no simple solution. Tinted lenses may help reduce the bright light entering the eye, but they also reduce the lower levels. The new photochromatic lenses which vary their degree of tint when light falling on them changes are not the answer since they change very slowly and often unevenly. Because they can create depth perception problems, their use is prohibited for aircrew members.

Night Vision

Anyone who has walked from the bright sunlight into a dark theater and tried to find a seat knows that it takes several minutes for the eye to become even partially dark-adapted. Actually, it takes 45 minutes, but for most purposes 30 minutes is sufficient. On the other hand, light adaption is fairly rapid. In addition to rapid opening and closing of the iris (pupil), a chemical reaction in the retina's rods and cones occurs which changes the eye's sensitivity. The sensitive chemicals can bleach out quickly (adapt to light) but take a while to regenerate and increase sensitivity for low levels of illumination (adapt to dark). Since vitamin A is an essential part of this chemical process, the concept about carrots being good for your eyesight is not just an old wives tale.

The fully dark adapted eye has one significant disadvantage. The central area of the retina that sees so well in the light is now blind. This is why it's easier to find a dim object in the dark by looking slightly off to one side.

There are no tinted lenses which will improve night vision, despite the ads in various magazines. Only an infrared or electronic device can improve a healthy eye's ability to see in low levels of illumination.

Fatigue

As much as 25 percent of body energy is used in the process of vision. The majority of the posterior portion of the brain's cortex is used in visual functioning and visual perception is much more than the faint resemblance between the eye and a camera. If you've ever tried to read while you had a fever, you've noticed how quickly you get tired and want to quit. Since it takes a continuous 45 watts of energy to run the brain, vision alone requires a sizeable amount of power. Mental fatigue, therefore, can affect vision.

If a state of fatigue sets in on a prolonged mission or from insufficient rest, visual performance will be affected. There may be difficulty focusing and compensating for eye muscle imbalance along with a decrease in visual comprehension. For the person with an uncorrected refractive error, these problems are intensified even further. The answer is always the same: adequate rest and respect for fatigue.

Visual Perception Time

It takes a small but finite length of time for the eye to respond to a visual stimulus. The delay in perception time was not too significant for the man who lived in a cave. But in this age of high speed vehicles and airplanes even a pedestrian may find the delay hazardous. Lag time in visual perception may be as high as .3 seconds. Another .4 seconds is required to move the eye so that a peripherally imaged object is fixed on the central part of the retina. Recognition takes about 1.5 seconds from first appearance in the eye's field of view.

If two airplanes approach head-on at 600 mph each, their relative velocity of 1,760 feet per second means they'll get 2,640 feet (one-half mile) closer before either pilot can even begin to pull the lever and avoid the collision.

Presbyopia

The stereotyped image of the fighter pilot as a young, dashing, clear-eyed daredevil no longer applies. Almost half of the Air Force pilots today are over 40 years of age. And most over-forty fliers know what presbyopia is all about.

The word presbyopia means *old-age sight,* and the condition is a gradual reduction in one's ability to focus adequately at close distances.

"My arms are too short," some jokingly explain as they have to hold their copies of *Playtime* at arm's length in order to read. The usual treatment is bifocals—eyeglasses with a lower segment of each lens ground to correct for near focusing. The wearer looks through the upper, distance part of the lens for seeing outside the cockpit, and through the lower segment for reading gauges and letdown plates.

But bifocals may not solve the aged aviator's visual problems. First-time bifocals have a fairly mild power in the lower segment. Even though it's designed to help him see reading material at 16 inches, his depth of focus is enough to allow him to see the instrument panel clearly at 30 inches. When his presbyopia progresses further, however, he may find that through a stronger lower segment, 30 inches is too far and through the top of the lens, too near! Perhaps trifocals are the answer, with the third segment on top so he can see the overhead gauges and switches! Suffice it to say that whatever a pilot needs to see, there is a lens that will enable him to see it. But no man-made lens will be as efficient as a normal eye with full accommodative power.

Sight is Precious

Pilots find out at least once a year whether they need corrective lenses or eye care. But anyone can get an eye examination and know for sure how well he's seeing. The challenge of the profession of optometry is not so much to be able to correct the imperfect vision of people who come to us, but to get to come to us those people who need visual correction and don't know it. As one pilot put it recently, "I can fly with a broken leg, possibly with appendicitis; but if I can't see, forget it!"

If you're not sure, make an appointment and find out. You never had and never will have the eyes of an eagle. But there's no reason for you not to see as well as you can. As least you can see with the eyes of a man. —Thanks to Interceptor

CREWVIEW

CAPTAIN HARRY W. VAN AKEN, III
305AREFS, Grissom AFB

"I'd rather be on the ground wishing I was in the air than in the air wishing I was on the ground."

The first time I ran across the above statement was when I noticed it on the wall of a simulator building. Its message came through loud and clear: the time for questions is when you've got both feet on the ground, not when you're in the air running out of airspeed, gas and ideas.

You and I know that thorough mission planning can answer the questions that could prove to be very embarrassing in flight, and can eliminate the need of asking: "Where do I go from here?"

Take the situation that involves flying into a base where radar is the only published approach procedure available. AFR 60-16 states that you may file to this destination "provided a positive aircraft position can be established within 25 miles of the terminal radar by use of a nonradar facility. Aircraft operating in PCA may file to nearest nonradar facility, regardless of distance from the terminal, and request radar vector service to the terminal radar." The reg also states that, under these conditions, an alternate must be filed on all IFR flights, regardless of weather conditions at the destination. With this guidance we can plan for the foreseen, but what of the unforseen; the loss of radio communications.

The IFR enroute supplement does supply guidance in this area but points out that the circumstances can vary; therefore, exact rules cannot be established. It goes on to state that in a situation not covered by regulations, the pilot is expected to exercise good judgment in whatever action he elects to take.

In this case, why not plan out a course of action before the situation ever arises? That way, a great deal of confusion can be avoided at a time when sound judgment is needed.

It would probably be a good idea to establish exact lost communications procedures with the ARTCC prior to beginning descent at your destination. If operating in IMC, the IAF for the active runway at the filed alternate should be used as the clearance limit fix. This will make it necessary for you to determine your filed alternate's active runway prior to flight. Now, if you lose radio communications during descent, you can squawk appropriate radio out codes and descend VMC, executing a radio out approach or, if operating in IMC, proceed to the filed alternate and execute the published approach in accordance with the lost communication procedures previously established. Also, it would probably be a good idea to include, in the lost communication procedures, an altitude at which you would fly to the alternate. In this way you would be afforded the opportunity of flying at an altitude which offers greater fuel economy, in the event of fuel shortage. This is just another step that can make your job easier and safer.

Remember, proper preparation and planning can not only save you headaches and embarrassment in flight, it can save your life!

BIG INSTRUMENT

MAJOR CHARLES M. MILLAR, JR.
1 CEVG, Barksdale AFB

ACADEMIC INSTRUMENT REFRESHER COURSE

Does the Academic Instrument Refresher Course (AIRC) taught at your base provide you with the training you expect? Recent evaluations have revealed a need for additional emphasis on this training, if it is to provide the pilot with the most up to date information.

Actually, the Academic Instrument Refresher Course could be called the Annual Flight Publications Review, for this is the function it fulfills. It is not intended to make you an expert in all areas pertaining to instrument flight, but should provide a comprehensive review of pertinent publications to enable you to locate the information you need. In other words, the course is designed to get you in the books and give you a working knowledge of where to find information regulating all phases of flight.

SACR 50-24 provides the basic outline for the SAC AIRC. Amplification of this outline is provided in OTSL Guide 60100 along with associated slides. This guide is specific on some subjects but is not all inclusive. The instructor must elaborate, when necessary, to achieve its fullest potential. Reading the instructor guide to the class will not satisfy the requirements of the course.

To present the course properly, the instructor must be knowledgeable and thoroughly prepared. He must use his training aids wisely and expand upon them as necessary. Training aids packages must be current to allow the student to follow the presentation.

You, the student, can do a lot to make your AIRC more beneficial. Pay attention and participate in the class, don't just fill a square. Ask questions if there is something you do not understand. Use the course as a forum for discussing instrument flying techniques with other pilots. If your school does not live up to your expectations tell the instructor and put it in your critique sheet. What you gain may be something you need.

5th anniversary

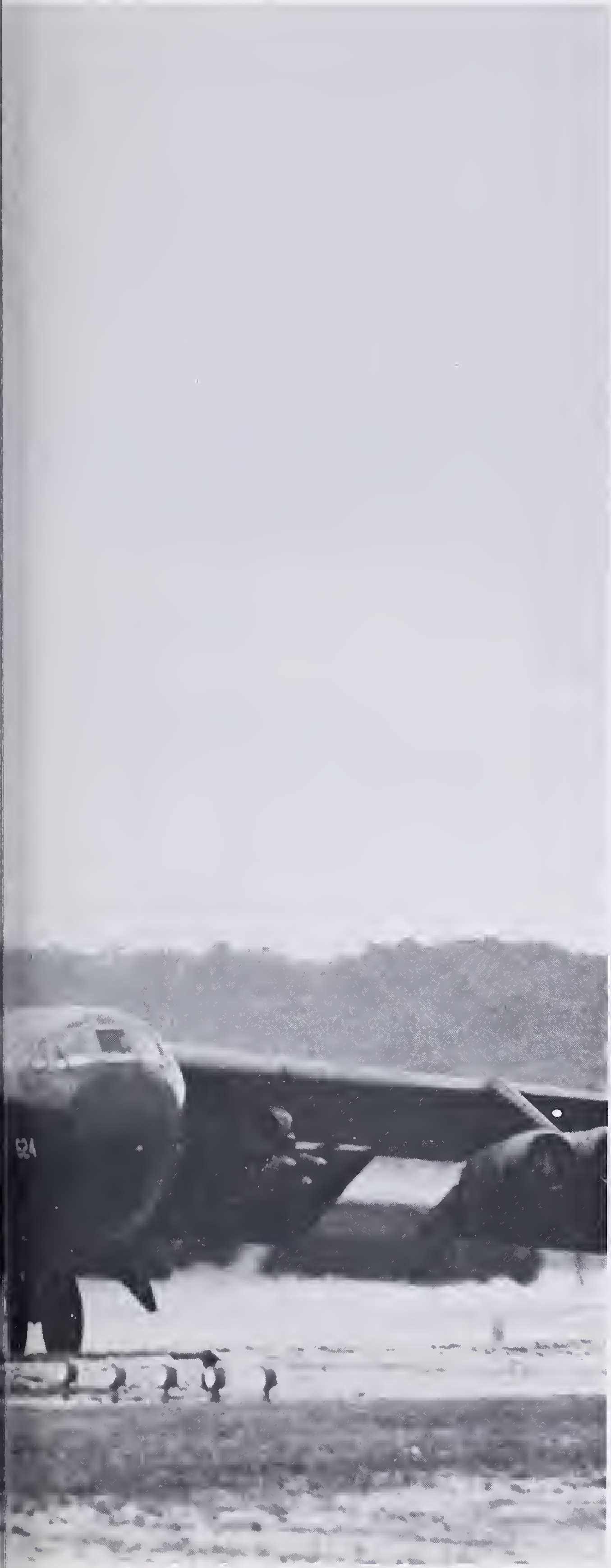
This month marks the fifth anniversary of the Big Instrument. It is an unofficial article purely for informational purposes. Occasionally, techniques are discussed and suggested, but no procedures are established. Primarily, we attempt to clarify or elaborate on problem areas or new procedures/equipment.

The Big I is geared toward the pilot, but we encourage navigators to read and participate in the preparation of our articles. Navigators have a definite stake in the successful outcome of every mission in which they participate. In order to properly monitor the pilot, the navigator must be knowledgeable in instrument procedures. Don't rely on the pilot for all the right answers.

We would like to express our appreciation for your responses and support of this feature. It is your article and without your participation it would not exist. The subject matter for the Big Instrument is obtained from CEVG evaluations and questions from the field. If you have a subject you would like to see discussed, please let us know. The address is: 1 Combat Evaluation Group (EVI), Barksdale AFB, LA 71110.

BUF

COPILOT



LT. THOMAS B. MONCURE
51 Bomb Sq, Seymour Johnson AFB

"You actually chose a B-52 over an IP assignment?"

"I don't know about you, but I wouldn't fly any aircraft that doesn't do acro."

"You'll only log copilot time, and wait years to be an aircraft commander."

Such is a sample of the feedback one sometimes gets when he chooses a "heavy" or "many motor" at the end of UPT these days. Granted there are certain thrills that only the T-38 (White Rocket) can give. For personal reasons, being a pilot training instructor did not attract me too much, so I took a B-52 assignment to Seymour Johnson AFB in North Carolina, close to my Virginia home.

After an enjoyable week at Carswell AFB, Texas, for Weapons School, and a miserable two weeks at Fairchild AFB, Washington, for Survival School, I arrived at Castle AFB, California for the four-month B-52 course. As academics started, my worst fears seemed to be coming true. I thought, "Is the copilot just a checklist reader . . . a glorified secretary?" The information to be learned seemed endless, and I had yet to start flying the thing. A little sentence in section eight of the Dash One seemed to describe what I thought my job would be for the next several years, it read ". . . he (the copilot) will also act as flight engineer."

With a swirling head full of knowledge received from the academic section, I trundled myself down to the flight line and began what is now nearly a year of flying the BUF. Naturally, my experience is limited, and I am not an authority on life in SAC, alert, or the combat crew business. On the other hand, I have been through enough B-52 training missions to know the copilot is much more than a checklist reader. Indeed he is one-sixth of a crew, and his proficiency (or lack of it) can easily determine the success of the mission, not to mention the safety of the aircraft.

Beginning with mission planning, one finds the copilot completing all calculations relating to the performance of the aircraft. Takeoff data, weight and balance, and the fuel log all must be computed and checked. Errors in aircraft performance data can cause a flight to be unsafe indeed. Missions average nine hours so miscalculations in the fuel log could result in lost training and if not identified in time, dangerously low fuel. Incorrect takeoff data might mean an unnecessarily aborted takeoff which would make you unpopular with everybody from the wing commander down. Drawing maps and keeping them current is also a part of mission planning for the copilot, who cross-checks his works of art closely with the navigator for accuracy. Low

level at night in the weather is no time to argue about the heading and altitude for the next leg. Being able to do all of the above quickly and with great accuracy is of prime importance for the copilot, especially in the face of rapidly changing weather or mission profiles.

Arriving at the aircraft an hour and a half prior to flight, the copilot finds that he has a lot more to do than just the paperwork. He does half of the exterior inspection and must be as capable of verifying aircraft condition for there is no backup for this inspection. Once inside the aircraft, the same holds true for the inspections and operational checks of many important aircraft systems which are on the copilot's side of the cockpit and out of the pilot's reach.

From takeoff to engine shutdown, the "co" makes sure the aircraft and crew functions smoothly and efficiently, foreseeing potential problems and making sure they do not become serious, or in many cases, even materialize in the first place. During normal operations, the copilot controls the radios, runs the extensive checklist, maintains the fuel log, and monitors the aircraft position, all the while frequently checking flight instruments and advising the pilot of any significant deviations. This constant "keeping on top of things" makes the aircraft and crew all the more capable of completing the assigned mission, which is what it is all about.

Occasionally I miss the yanking and banking of fighter-type aircraft. The B-52 offers its own thrills, however, such as low level, refueling, and it's great being able to move around a little inside the plane. The precision required to keep a bird the size of the BUF under control when in close proximity to the ground or another aircraft is considerable. Also, pilots are faced with many changing control responses and trim requirements during the course of a mission due to gross weight and configuration changes. (The BUF can weigh anywhere between 180,000 and 488,000 pounds in-flight, depending on fuel load alone.) The most often heard complaint is probably about the nine to ten hour missions for which little can be done, because once low level, refueling, a nav leg, and some pattern work are added together, the total is seldom less than eight hours.

In the air, there is plenty of opportunity for the copilot to hand-fly the aircraft. While it is true that the aircraft must be on autopilot for the nav leg, and the pilot usually does the refueling, most pilots will readily transfer control during other times and assume the copilot's duties. It doesn't pay for a copilot to be content not flying the aircraft and just reading the checklist and managing systems. That leads to sloppy instrument flying which hurts at upgrade time. I enjoy simply flying the climbs, descents, or anytime I can pass my paperwork to the boss in favor of handling the aircraft. This way, it is easier to remind myself, "your aeronautical rating is pilot, your crew position is temporarily copilot."

All of this is reducible to the simple fact that although being a B-52 copilot is not all fun, there is no less a necessity for a very professional job through the entire mission. I find satisfaction in the fact that I can fly an aircraft unlike any other, for while there are several fighter-types, transports, and such available to pilots today, there is only one BUF and it offers a very valuable experience.

Are you a top notch cartoonist - illustrator? Here's an opportunity to prove it as you expand your horizons!

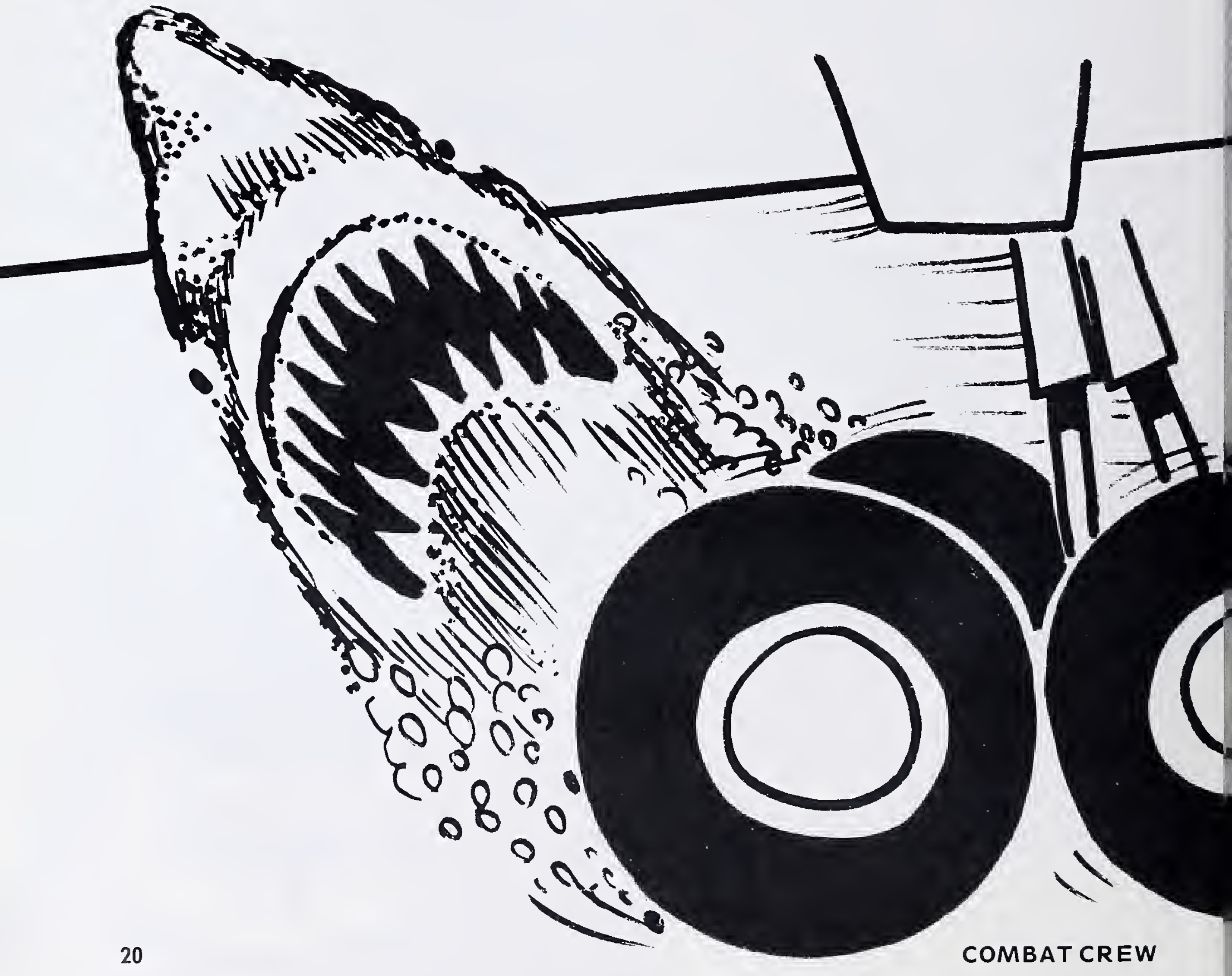
The interesting and challenging position of Art Editor, Combat Crew, is now open to the airman that qualifies. If you would like to try for the position and work with a professional magazine staff, send examples of your cartooning illustrations to Editor, Combat Crew, Offutt AFB, NE, 68113. Do it now! The position never stays open long!!

CAUTION

There are many cautions and warnings that we are aware of; a few we can recall verbatim. There are also those that we learn for what seems strictly academic purposes—those that seem to have little possibility of becoming a viable factor in everyday operations. The slush and water puddles caution is one I treated in that light; that is, until one dark and stormy night...

My crew was TDY with the 4102d AREFS at Clark; we were winding up a week of strip alert at Agana. It had been a relaxed week at Agana. We had been called to the aircraft a few times but never launched. All week long we enjoyed the good Navy chow and the sunshine at

"Slush and water puddles on the runway can cause significant structural damage to the airplane, particularly at high speeds."



the nearby pool. Two nights before we were scheduled to complete our tour, the weather took a turn for the worse. A deep low pressure system had moved in causing a terrific storm, with low visibility, strong winds and an unusually large amount of rain. Several B-52s destined for Andersen had been diverted to Kadena. As a result, several strip tankers were launched to assure the bombers made Kadena with adequate fuel. We were one of the last -135 crews called into action—and this was after the storm was at its most intense stage.

We received our launch order, completed the checklists and headed down the drenched runway.

CAPTAIN LAWRENCE P. WRAY

Shortly after S-1 and before rotation, we felt what seemed like a power loss but a check of the engine instruments indicated otherwise. Takeoff was continued and rotation was normal. The pilot called for the gear and I gave it the normal pull but the handle wouldn't budge. I tried it again and again to no avail. By this time the pilot, visibly concerned and questioning my manhood, reached over to give it his best effort. The uniformity of results was alarming. We raised the flaps and gradually climbed to 8000 feet. By this time departure control and the command post were well aware of our problem. We were having difficulty maintaining 8000 feet so we obtained clearance for and made a descent to 5000 feet where we were to spend the rest of the night. During the next few hours we troubleshot the system and went through all the applicable emergency checklists. The gear lock indicator stripes were aligned but the gear wouldn't move from the down and locked position. At this point, neither we nor the command post had any solid guesses as to what was causing the problem. We decided not to use the landing gear override. Instead, we orbited for more than four hours until the weather system cleared. During the early morning hours we made an uneventful approach and landing at Andersen. Tanker Charlie met us and gave the initial report. There was a gaping hole in each side of the fuselage just aft of each wheel well. Approximately one foot diameter sections of the exterior skin were ripped away, leaving a jagged hole exposing the inner fuselage surface.

So we had holes in the fuselage—why should that affect the gear. Further inspection of the left main gear revealed that the oleo leveling indicator switches and wiring had been ripped away, thus preventing the gear from coming up. By now we had decided on the culprit—water on the runway. More specifically, puddles of water on the active runway at Agana. The surge we felt on takeoff roll was the result of our tires hitting the water. The water was transformed into high pressure streams and was rotated off our tires at great speeds. This action caused the oleo leveling indicator switches to be torn from their connectors after which they impacted the fuselage with enough force to rip out sizeable sections of our outer fuselage skin. When we first saw the damage, we couldn't believe our eyes—to think that soft old water could do that to our airplane.

As we boarded the bus for maintenance debriefing, my thoughts drifted back to Section IX of the Dash-1: "...water puddles on the runway can cause significant structural damage to the airplane..."

ANON E. MOUSE
28 Bomb Wing, Ellsworth AFB

It was a stormy fall season. I was a young gold-bar lieutenant waiting to go to advanced flying school. While standing by for a class date, I was told I could take a trusty T-Bird on a cross-country and get some experience. Two pilots were required for all weekend flights so I coerced my flight commander into going on a good IP route check to Denver and Salt Lake City, the "good" overnight cities of the era and area.

The trip was set to leave the following Friday around 1600. This would allow me to make a strange field landing at night and still get to Denver early enough to hit the town. I would then get a good night's sleep and leave Denver after lunch for a short hop to Hill AFB and Saturday night there. Sunday would entail only two easy hops to the home drome and termination of an enjoyable trip.

Friday morning was clear and bright as a mid-Texas fall morning could be, crisp but with a warming sun as the day progressed. The promise of a beautiful Texas weekend was in the air and was very welcome after a foregoing period of bad weather.

After a good lunch at home, I met my flight commander at base ops. I had planned each leg the day before. All we had to do was check the weather plus crank in the wind and fuel to complete the flight data cards. The weather forecast was the first ominous note and sounded like a late night TV murder mystery: thunder, lightning, wind, and rain.

An area of thunderstorms from Cheyenne, Wyoming to Raton, New Mexico, and then east to the Kansas-Nebraska border had grown into a severe weather warning area. Tops were to be about 40,000 feet with layered cirrus between 10 and 40.

Now, being two of Uncle Sam's finest fighter type pilots, we were not going to let a forecast thunderstorm deter us. After all, it was only a forecast and only valid until 1900 local time, shortly after our landing time in Denver. The thunderstorms would probably be dissipating, we decided, and be no problem. Also, because the western edge of the weather system was along the eastern slope of the Rockies, we could always alter course slightly west. Fuel would be no problem because in those days when you reached about 18,000 feet you were always "cleared to climb on course direct." We could set our power at 96%, hold 275 KIAS, and continue to climb as fuel burned out and we got lighter. We would probably be above 40,000 feet before we got to the weather.

Our careful and detailed planning complete and clearance filed, we kicked a tire, lit a fire, and blasted off. After a precise low frequency range departure, we were "cleared to Henderson Fan, maintain above 20,000 feet, direct." Everything was going just as planned.

Approximately 20 minutes after takeoff, we could see the thunderstorms that weather had forecast. They were there and the closer we got, the bigger they looked.

We were not going to be able to top them—first, because we were only at 30,000 feet and second, the storms were farther south than forecast. But we were not dismayed. We would just turn west and skirt the edge until we were either west of the storm area or above it, then go north as planned.

We proceeded west bound until our computer minds decided we would flameout before we got to Denver if we continued further west. We were about 40,000 feet at this time and decided we were on top of most of the weather. Being determined to get to Denver, we turned north and almost immediately flew into the clouds.

Our navigation equipment was an ARC-6 low frequency ADF radio, which on this particular evening, seemed to favor the centers of passing thunderstorms as a homing signal. This continual uncertainty of our NAVAID and the fact that we knew we were somewhere in the vicinity of Pueblo, Colorado, when we entered the clouds, did nothing to bolster our enthusiasm.

Thunderstorms were our most pressing problem, so we investigated and came up with a solution. We would pull the nose up gently until we came out of the cirrus. Then, before we stalled at about 43,000 feet, we would pick out the tops of thunderstorms along our route, lower the nose, and dive back into the cirrus to pick up speed for the next zoom maneuver.

We proceeded generally northward, repeating this highly technical navigation maneuver as rapidly as we could. Our ADF indicated with some reliability that we had indeed passed Pueblo, but considerably farther west than we had originally planned.

Well, as all reasonable persons know, even the most "carefully" planned enterprise sometimes varies due to the unknown or unforeseen. During a zoom, we checked our storm tops, turned to a more northeasterly heading, lowered our nose to pick up speed, entered the clouds, and instead of the snow white glare of cirrus—it got extremely dark (black even) at an alarming rate. The blackness was punctuated by bright flashes of light, very rough air, and trouble keeping the airplane under control. Our sharp fighter pilot minds immediately deduced we had entered a thunderstorm and being normal humans, our adrenalin had caused our minds to function even faster. We wanted out! About 14 hours and 11 minutes later, we were spit out the side of the buildup, but not before the storm had taken its toll.

A quick investigation disclosed that we had no UHF radio, no fuel boost pumps, no J-8 altitude indicator, and no oxygen system. The first corrective action was to pull the emergency oxygen bottle green apples. Then, while flying insturments on needle, ball, and airspeed, still above 30,000 feet in the clouds, we found we had only 90 gallons of fuel left. Since we knew we were well west of course over the Rockies, we turned due east at reduced power. We were about out of ideas except that we took turns flying while the other adjusted and tightened his parachute. We had decided to bail out at 16,000 feet, just in case were still over the 14,000 foot peaks. We were also transmitting May Day in the blind just in case it was only our receiver that was inoperative.

As we were still descending through 20,000 feet, I, the hyperventilating gold-bar lieutenant, saw a light on the ground. Being a native of the area, I immediately recognized the light as part of the Mount Manitou Cog Railway near Colorado Springs. Knowing that Peterson Field was a short distance due east, I took control of the aircraft, rolled inverted, saw Peterson Field and flew straight down, vertically, toward the runway. Luckily, my accomplice took over and pulled us out of our dive in front of the tower with flashing green light. After slowing down to landing speed, we did land safely. While taxiing in, the fuel began to feed normally and our emergency oxygen bottles went empty.

Our persistence in trying to get to Denver drove us into a situation where we were nearly overwhelmed and we reacted in a way that showed a severe lack of judgment.

(1) Our high altitude and excitement made us use more oxygen and caused us to believe we had a bad system.

(2) We did not remember to monitor our UHF guard channel communications, although guard channel was working.

(3) Finally, our fuel system also had some moisture in it and had frozen a valve, but we did not even try to de-ice.

All in all, a bad showing for the flight commander and the young gold-bar looie just out of basic.

for the birds

continued from
page 7

an immediate hazard to aircraft on landing and takeoff. Many of these airborne flocks go undetected during periods of low visibility and at night.

Winter areas which accommodate the heaviest concentration of birds include:

- Atlantic-Chesapeake Bay; Back Bay area in Virginia; and the Currituck sound, Lake Mattamuskeet area in North Carolina.
- Mississippi; the Mississippi Valley and the South Louisiana marshes along the Gulf of Mexico.
- Central; along the Missouri River and Gulf Coast of Texas.
- Pacific; in the general area of Lake Tahoe and the Sacramento Valley area in California.

In addition to visual sightings by ground observers and from aircraft, radar surveillance of waterfowl migration has proven to be valuable in determining the time, direction, and magnitude of each migration. However, altitude is the most difficult factor to determine accurately. Birds have been observed and bird strikes have occurred at most altitudes up to 25,000 feet. However, the highest concentration of bird observations is below 5000 feet AGL and most bird strikes occur at altitudes of 2000 feet or less. Approximately 50% of the strikes occur during the enroute phase of flight which includes low level navigation training. The other half occurs in the vicinity of the airfield during takeoff, landing, initial climb, go-around, approach, or landing flare.

During overcast conditions, waterfowl tend to migrate immediately under the cloud layer. Therefore, during the migratory season when the hazard is at its highest crews should avoid flying, whenever possible, immediately under the cloud layer; especially when the base is under 5000 feet.

When cloud tops are below 10,000 feet, waterfowl tend to migrate just above the cloud tops. Generally, the lower the cloud tops below 10,000 feet, the more likely waterfowl will migrate just above the overcast. This situation seems to exist when the cloud layer develops after the birds have departed on their flight. In addition, waterfowl rarely migrate between cloud layers.

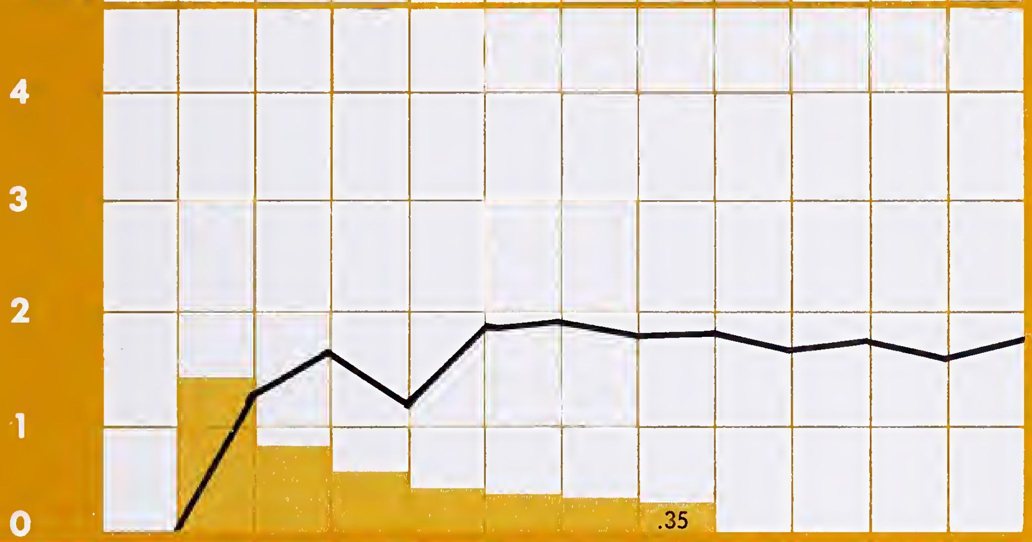
In the future we will continue to be forced to coexist with the bird population in the flying environment, and bird/aircraft impacts will continue; however, there are some procedures recommended by the USAF Safety Center that can be implemented at the local level to help reduce the hazard of bird strikes:

1. Flying safety officers should see that every precautionary measure is taken, both on the ground and in the air, to reduce aircraft/bird strikes.
2. When possible, pilots should plan their flights to avoid airspace in which flocks of birds may be expected during the migration season.
3. When performing low level operations during migratory seasons, reduce airspeed if possible to minimize strike damage.
4. If equipped with dual visor helmet, follow command directives for their use. Dual visors prevented serious injuries in the past.
5. Decrease airspeeds and increase rates of climb or descent during terminal activity. Enroute aircraft should fly above 10,000 feet MSL for as much of each leg as possible.
6. Restrict local night flying during periods of increased bird activity. Migratory birds are very active at night and more realistic scheduling can help to reduce this strike hazard.
7. Report bird strikes as outlined in AFR 127-4. Cross-feeding of birds strike incidents/accidents will help improve data on the subject and better pinpoint current danger areas. In order to compile meaningful statistics on the bird problem, accurate information is needed. When available, be sure to include aircraft speed, altitude above ground level (AGL), phase of flight and type of bird if known.

The fall bird season is here, you and I and everyone associated with flying operations is in a position to make his contribution to reduce the frequency, and in turn, the damage and cost of the many bird/aircraft collisions that occur annually.

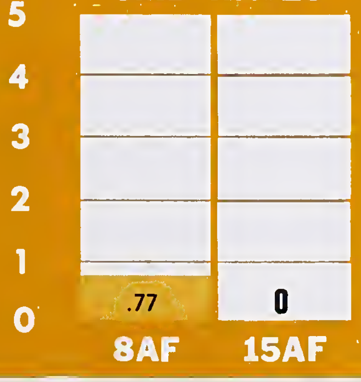
1975 Flying Safety Rate

★ SAC MAJOR ACCIDENT RATE (PER 100,000 FLYING HRS)



ACCIDENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1974 RATE	.00	1.27	1.63	1.20	1.88	1.96	1.69	1.76	1.56	1.64	1.49	1.58
1974	0	1	1	0	2	1	0	1	0	1	0	1
1975	0	1	0	0	0	0	0	0				

1975 SUBORDINATE CMD RATES



ACCIDENT STATUS

FB-111	FEB 75
B-52G	SEP 75

PROFESSIONAL PERFORMERS

Individuals selected for these pages as SAC's top professional performers of the month are chosen from nominations made by all SAC units. Selection is made only after all nominations have been carefully screened and those chosen meet the highest standards of excellence as outlined in SACR 127-2.

PILOT

Captain Dale W. Carlson, Blytheville AFB, B-52G aircraft commander, displayed outstanding judgment and airmanship while handling multiple inflight emergencies. After takeoff, his right tip gear failed to retract. Analyzing his situation, he elected to continue the training mission. As he began his descent into the low level route, the master caution light illuminated and he discovered he had lost his left inboard spoilers due to hydraulic pump failure. Returning to home base, he experienced autopilot failure and also discovered that he had almost 15,000 pounds of trapped fuel resulting in a low fuel situation. After declaring an emergency for low fuel, he lost radio communication which forced him to descend in VFR conditions for approach and landing.

During each of these flight emergencies, Captain Carlson handled the situation well by accurately analyzing and taking the proper corrective action to safely accomplish his mission.

PROFESSIONAL PERFORMERS

TITAN Crew S-205, 390 SMW, Davis-Monthan AFB: MCCC Capt Richard A. Siegel, DMCCC 2/Lt Jon K. Turnipseed, MSAT TSgt John R. Douberly, and MFT Sgt Alan M. Hawkins.

MAINTENANCE MAN. Staff Sergeant Orville T. Gibson, 5th Field Maintenance Squadron, Minot Air Force Base.

MINUTEMAN Crew E-013, 91 SMW, Minot AFB: MCC Capt James E. Coursey, and DMCCC Capt Jerry W. Bennett.

HIGH NOON

Strategic Air Command has completed a flying exercise to "evaluate the capability of the command to plan and execute contingency operations with minimum preparation time." Nicknamed **Operation High Noon,** the exercise included units from Great Britain's Royal Air Force Strike Command and the Tactical Air Command.

Designed to provide a comparative evaluation of each unit's capability to respond to a simulated operational situation, the exercise required planning and execution with limited notice and reduced preparation time. Mission objectives included evaluation of new concepts, tactics and procedures that are applicable to rapid response situations.

All 21 SAC bomber, three tanker wings, and two non-collocated tanker squadrons within the continental United States participated. Each SAC bomb wing participated with two bombers (B-52s or FB-111s) and two KC-135 tanker aircraft. Each SAC tanker wing and non-collocated squadron provided two KC-135s. Each of the three Tactical Air Command (TAC) F-111 fighter wings also employed two aircraft.

With the exception of the RAF, all participating aircraft performed enroute aerial refueling as part of the exercise. The RAF Strike Command prepositioned four Vulcan bombers at a staging base at Barksdale AFB. All other aircraft took off from and landed at their home bases. A total of 104 aircraft participated in the exercise.

The units participating were notified a few hours in advance of the execution of the exercise. SAC unit commanders selected their respective aircrews and aircraft from those routinely on alert at that time; the RAF and TAC commanders also employed a random selection procedure for their crews. Strategic Air Command maintains up to 30 percent of its bomber and tanker force on 24-hour ground alert; therefore, other aircrews and aircraft replaced those selected to participate in this exercise and no alert degradation resulted.

Each aircrew planned and flew one mission during the two-day exercise. The aircraft and crews were scored on all aspects of mission reliability, including their accuracy and proficiency in navigation, controlled timing, and with the exception of the RAF, aerial refueling.

The bombers and fighters were also scored on multiple low level bomb runs. Bombs were carried by those aircraft; all bombing was simulated and radar scored through aircrew transmissions of electrical impulses recorded by ground-based scoring sites. Mobile radar bomb scoring (RBS) equipment, using radio and radar signals, measured the accuracy of these simulated bomb drops.

Operation High Noon gave participating commands a useful means of evaluating and determining the capabilities of their respective unit staffs, aircrews and supporting personnel to respond rapidly to potential contingency operations. Awards for excellence on the various phases of operational activity were presented after the exercise. The results were:

OUTSTANDING SAC UNIT	**92 BMW**
BEST UNIT BOMBING	**366 TFW**
BEST UNIT NAVIGATION	**5 BMW**
BEST F/FB-111 MISSION	**380 BMW, R-13**
BEST B-52 MISSION	**92 BMW, S-03**
BEST KC-135 MISSION	**92 BMW, R-106**
BEST VULCAN MISSION	**RAF-4**

HALL OF FAME

TACTICAL FLYING

OVER SIXTEEN YEARS

916 AREFS, Travis	Sep '59

OVER FIFTEEN YEARS

97 BMW, Blytheville	Mar '60

OVER FOURTEEN YEARS

410 BMW, K. I. Sawyer	Oct '60
19 BMW, Robins	Oct '60

OVER THIRTEEN YEARS

11 AREFS, Altus	Feb '62
301 AREFW, Rickenbacker	Jul '62
96 BMW, Dyess	Aug '62
449 BMW, Kincheloe	Aug '62

OVER TEN YEARS

320 BMW, Mather	Jul '65

OVER EIGHT YEARS

92 BMW, Fairchild	Feb '67
55 SRW, Offutt	Aug '67
2 BMW, Barksdale	Aug '67

OVER SEVEN YEARS

319 BMW, Grand Forks	Dec '67
22 BMW, March	Feb '68

OVER SIX YEARS

5 BMW, Minot	Feb '69
95 SW, Goose	May '69
6 SW, Eielson	Jul '69

OVER FIVE YEARS

42 BMW, Loring	Oct '69
93 BMW, Castle	Nov '69
28 BMW, Ellsworth	May '70

ICBM

OVER ELEVEN YEARS

381 SMW, McConnell	Nov '63
90 SMW, F. E. Warren	July '64
1 STRAD, Vandenberg	Sep '64

OVER TEN YEARS

308 SMW, Little Rock	Aug '65

To gain listing in the Hall of Fame, a SAC unit must be accident-free for 48 months.

SAC Safety Screen

The SAC Safety Screen is an honor roll of SAC's most professional crews. To gain listing on the Screen, crew members must be nominated by their unit commanders and meet high selection criteria of experience in their aircraft or missile system *IAW SACR 127-2.*

5 BMW, Minot Crew E-08: P Capt Daniel L. Ray, CP Capt Gerald M Vermillion, CP 1/Lt Carl M Neuhafer, RN Capt Wade H Stevens, NN 2/Lt Steven E Armie, EW 1/Lt Ross D Litman II, AG A1C James A Angst

22 BMW, March Crew R-17: P Capt Donald G Cook, CP 1/Lt John A Breed, CP 1/Lt Edwin C Melendez, RN Maj Robert D Dowden, NN 2/Lt Harrison A Duhlary, EW 1/Lt Bruce B Pafume, AG SSgt Dennis A Raice

55 SRW, Offutt Crew E-106: IP Maj James C Brady, CP 1/Lt James N Curry, IN Maj Howard D Stitt, IBP TSgt Elliott B wilauer Jr

92 BMW, Fairchild Crew E-501: P Capt Walter P Goddard, CP 1/Lt Eldon E Bertran, RN Maj Roland R Larson, NN 1/Lt Chad T Martensen, EW Maj Eldon J Canady, AG MSgt Donalle Walker

96 BMW, Dyess Crew E-16: P Capt Dan F Hyman, CP 1/Lt Ralph R Person, CP 1/Lt Jimmy D McRaney, IRN Maj Donald L McKee, NN 1/Lt Robert D Hursh, EW 2/Lt Michael R Arkelin, AG Sgt Kenneth L Johnson

100 SRW, Davis-Monthan U-2 Pilot: Capt Robert T Rendleman

42 BMW, Loring Crew E-159: AC Capt Albert J Franko, CP 1/Lt Robert A Dickson, CP 1/Lt Harry S Keyes, N Capt Richard A Scott, BO A1C Gregory D Moon

509 BMW, Pease Crew S-37: P Capt Ronald E Ace, N Maj Bryan K Hutchings

416 BMW, Griffiss Crew R-121: P Capt Robert A Ray Jr, CP Capt Edward D Dingivan, CP 1/Lt George M Rampulla, N 1/Lt James J Hlavacek, BO SSgt Eugene J Cowles

410 BMW, K I Sawyer Crew E-125: AC Capt Thomas L Dillard, CP 1/Lt Joseph G Gadzik, CP Capt James E Peters, N 1/Lt Ervin C Jackson, BO SSgt Ronald W VanZandt

307 SW, U-Tapao Crew E-121 (TDY from Carswell): P Capt Kirby A Van Horn, CP 1/Lt Peter R MacLean, N 2/Lt Joseph D Gibson, BO TSgt Darrell Brummett

90 SMW, F E Warren Crew S-173: MCCC Capt Dennis S Murphy, DMCCC 1/Lt John P Gibeau

91 SMW, Minot Crew E-091: MCCC Capt Edwin C Taschner, DMCCC 2/Lt Edward F Teigeler

308 SMW, Little Rock Crew E-044: MCCC Capt Keith S Mirrer, DMCCC Capt William P Cesary, MSAT A1C Gilbert D Harecka, MFT A1C Larry B Sarver

321 SMW, Grand Forks Crew S-207: MCCC Capt Raymond F Matheny, DMCCC 1/Lt Richard J Baker

341 SMW, Malmstrom Crew E-104: MCCC Capt David E Tundel, DMCCC 2/Lt Mark V Orlicky

341 SMW, Malmstrom Crew E-024: MCCC Capt Bryan W Kraft, DMCCC 1/Lt Laurence M Trawel

351 SMW, Whiteman Crew R-154: MCCC 1/Lt Wallis M Benedict Jr, DMCCC 2/Lt Larry T Bramlitt

381 SMW, McConnell Crew E-096: MCCC 1/Lt Craig E Allen, DMCCC 1/Lt Brian E Carron, MSAT A1C Mark T Goodlund, MFT A1C Duane E Weaver

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APPLICATION for retraining into AFSC A111XO, B-52 Defensive Aerial Gunner and A112XO KC-135 Inflight Refueling Operator has been reopened. Due to the limited amount of available quotas, only the most qualified applicants will be approved. Application instruction and eligibility criteria can be obtained from the Formal Training Unit of your CBPO.
FLARE
GUNNER
FLARE